City, University of London

BSc Computer Science

Final Year Project

Project Definition Document

‘Penalty Charge Payment’ Android Application Integrating Optical Character Recognition technology.

Proposed by:

Shahbaz Syed

Word Count : 1238

Table of Contents:

Contents

[Introduction 3](#_Toc96262234)

[Problem to be solved 3](#_Toc96262235)

[Problems 3](#_Toc96262236)

[Primary Objective 4](#_Toc96262237)

[Primary Objective 4](#_Toc96262238)

[Secondary Objectives 4](#_Toc96262239)

[Literature review 4](#_Toc96262240)

[Design 4](#_Toc96262241)

[Implementation 5](#_Toc96262242)

[Report 5](#_Toc96262243)

[Project Beneficiaries 5](#_Toc96262244)

[Work Plan 7](#_Toc96262245)

[Ethics Checklist 7](#_Toc96262246)

[**Further Information** 10](#_Toc96262247)

[Participation Information Sheet 11](#_Toc96262248)

# Introduction

Most people who drive a car in London understand the pain when one sees a parking charge notice pop out when checking their posts. Londoners live a busy life if were not at school or at work were out with friends and family. We are all on a grind living life to the fullest. All that momentum and joy shoots down when we get ready to pay the fines we have. Some fines increase in price because were too busy to pay them and forget. What if there was an app that would automatically do that for us. An app where all you needed to do was to take a photo of the letter and the ticket would be paid. An app where we could see all the tickets, we ever got to understand the reasons why we get those tickets in the first place and where all our hard-earned money goes to waste.

# Problem to be solved

For the purpose of this project, the implementation will be limited to only a few boroughs only and only a few options for each payment method, however this will serve as a proof of concept, and may be scaled to larger establishments and entirely different domains.

As people who are busy with our daily lives, we use social media as a form to keep us all connected, but this distracts us from focusing on the task that we have time limits on. As Londoners who drive we understand how frustrating it has become to avoid paying for charges like the Dartford charge, ULEZ daily charge and the congestion charge in central London. Caught up in the busy Londoner life we sometimes park in places where we shouldn’t and end up getting PCN (Penalty Charge Notice) tickets in the post. A few of us are great at quickly paying it and reap the benefits of paying only half price of the charge but there are many of us who miss the 14-day window and end up having to pay the full price and in some cases 50% or more on top of the original fine. The tiresome task of paying a fine could be avoided if there was an app to do it all for us. Its purpose would be o simplify paying a parking fine so that we could save money by not paying our tickets late. It will also allow us to see where we are getting the tickets and what we can do to avoid them.

## Problems

|  |  |
| --- | --- |
| Problem | Solution |
| Some people don’t have the time to pay for the ticket | The app will reduce the time needed to pay for the ticket drastically making it easier and simple to pay the fines |
| Paying the fine late ends up costing more | The app can use just a photo to pay for the fine so no need to keep the paper with you and as it is simple and easy as soon as you see it you could pay it under 2 minutes |
| The task is boring and sometimes people just want to put off paying it | The app will allow for quick payment so it would be perfect for people who are very busy |
| No way of tracking where a person gets tickets repeatedly | The app will save tickets previously paid for through the app so you could understand and avoid the reasons for you getting the fine previously |
| No one website for all different boroughs | The app will simplify this through either image recognition of with a simple drop-down tab so all websites in one place. |

To achieve these solutions external / third party technologies maybe needed. An online Information storage system / online database may also be needed.

# Primary Objective

## Primary Objective

To provide a quick and easy to use application to allow people to pay for there parking fines/ penalty charge notices all in one place. To simplify the process of paying these fines and provide a way for users to see all previously paid for tickets.

## Secondary Objectives

To provide the functionality of other tasks that could be done on the payment websites through the app. For example, be able to send an appeal for the penalty charge or to be able to see the images of the vehicle in question through the app.

# Literature review

Task : To provide an in-depth review covering the planning designing and execution of creating this application. Explaining the challenges overcome, benefits delivered and based on the completion of the project outline its developments stages and room for development and improvement.

# Design

To provide clear design specifications with justifications explaining user accessibility and convenience and how it would look like a final product. The application should be simple and clear but have complex functionality.

A page-by-page design should be provided with explanation, and this will be used as the design for the application. Any changes or additions made to any pages should be explained as well. Use user feedback to develop the visual aspect of the application as well as ease of use. Should create accurate wireframe representations to define high level app structure.

Using the wireframe representations if the user feedback is positive use, it and if not, alterations must be made.

# Implementation

* Create a database to store user data.
* Create an application that is linked to database
* Provide functionality in the application to connect to websites and using data entries in the app pay for fines online.
* Provide the application with the ability to also use image recognition to retrieve data from just a PCN document
* App will have login functionality and email addresses and password should be kept securely
* App will allow individuals to have access to view their previously paid fines.
* App will allow users to change and edit already set payment details and email addresses that are provided to the council websites that issue receipts.
* Possibility for app to email user the most common places where they had got fines at the end of the quarter.

# Report

A fundamental part of this project is to document the processes of building the project and then make reports on it before during and after the completion of building this project.

* Report will document the requirement alterations depending on the complexity of the projects development.
* Report will contain the documented milestones for each stage of the development of this project.
* Report will document the progress made through the duration of the project with insights to changes made and challenges overcome possibly containing useful resources used to develop the project.

# Project Beneficiaries

Four beneficiaries have been highlighted below:

Users will be able to pay their parking fines quicker which would save them their hard-earned money by paying before the 14-day period, so they only have to pay 50% of the fine.

Users will be introduced with an app that allows them to pay for any London based penalty charge without needing to look through the documents sent in the post for a website.

Users will be able to track where they got their tickets and with the data saved to look back at maybe change their parking habits or upgrade their permits to avoid the fines.

Users will be introduced with a new technology never used before by councils that issue fines to streamline their payment procedure.

# Work Plan

Chart 1.1 Illustrates a truncated view Gantt Chart outlining core project deliverables and objectives.

Timeline

Description automatically generatedChart 1.1

# Ethics Checklist

**Part A: Ethics Checklist**

|  |  |  |
| --- | --- | --- |
| **A.1 If you answer YES to any of the questions in this block, you must apply to an appropriate external ethics committee for approval and log this approval as an External Application through Research Ethics Online - https://ethics.city.ac.uk/** | | *Delete as appropriate* |
| 1.1 | Does your research require approval from the National Research Ethics Service (NRES)?  e.g. because you are recruiting current NHS patients or staff?  If you are unsure try - https://www.hra.nhs.uk/approvals-amendments/what-approvals-do-i-need/ | **NO** |
| 1.2 | Will you recruit participants who fall under the auspices of the Mental Capacity Act?  Such research needs to be approved by an external ethics committee such as NRES or the Social Care Research Ethics Committee - http://www.scie.org.uk/research/ethics-committee/ | **NO** |
| 1.3 | Will you recruit any participants who are currently under the auspices of the Criminal Justice System, for example, but not limited to, people on remand, prisoners and those on probation?  Such research needs to be authorised by the ethics approval system of the National Offender Management Service. | **NO** |
| **A.2 If you answer YES to any of the questions in this block, then unless you are applying to an external ethics committee, you must apply for approval from the Senate Research Ethics Committee (SREC) through Research Ethics Online -**  **https://ethics.city.ac.uk/** | | *Delete as appropriate* |
| 2.1 | Does your research involve participants who are unable to give informed consent?  For example, but not limited to, people who may have a degree of learning disability or mental health problem, that means they are unable to make an informed decision on their own behalf. | **NO** |
| 2.2 | Is there a risk that your research might lead to disclosures from participants concerning their involvement in illegal activities? | **NO** |
| 2.3 | Is there a risk that obscene and or illegal material may need to be accessed for your research study (including online content and other material)? | **NO** |
| 2.4 | Does your project involve participants disclosing information about special category or sensitive subjects?  *For example, but not limited to: racial or ethnic origin; political opinions; religious beliefs; trade union membership; physical or mental health; sexual life; criminal offences and proceedings* | **NO** |
| 2.5 | Does your research involve you travelling to another country outside of the UK, where the Foreign & Commonwealth Office has issued a travel warning that affects the area in which you will study?  *Please check the latest guidance from the FCO -* [*http://www.fco.gov.uk/en/*](http://www.fco.gov.uk/en/) | **NO** |
| 2.6 | Does your research involve invasive or intrusive procedures?  These may include, but are not limited to, electrical stimulation, heat, cold or bruising. | **NO** |
| 2.7 | Does your research involve animals? | **NO** |
| 2.8 | Does your research involve the administration of drugs, placebos or other substances to study participants? | **NO** |
|  |  |  |
| **A.3 If you answer YES to any of the questions in this block, then unless you are applying to an external ethics committee or the SREC, you must apply for approval from the Computer Science Research Ethics Committee (CSREC) through Research Ethics Online - https://ethics.city.ac.uk/**  **Depending on the level of risk associated with your application, it may be referred to the Senate Research Ethics Committee.** | | *Delete as appropriate* |
| 3.1 | Does your research involve participants who are under the age of 18? | **NO** |
| 3.2 | Does your research involve adults who are vulnerable because of their social, psychological or medical circumstances (vulnerable adults)?  This includes adults with cognitive and / or learning disabilities, adults with physical disabilities and older people. | **NO** |
| 3.3 | Are participants recruited because they are staff or students of City, University of London?  For example, students studying on a particular course or module.  If yes, then approval is also required from the Head of Department or Programme Director. | **NO** |
| 3.4 | Does your research involve intentional deception of participants? | **NO** |
| 3.5 | Does your research involve participants taking part without their informed consent? | **NO** |
| 3.5 | Is the risk posed to participants greater than that in normal working life? | **NO** |
| 3.7 | Is the risk posed to you, the researcher(s), greater than that in normal working life? | **NO** |
|  |  |  |
| **A.4 If you answer YES to the following question and your answers to all other questions in sections A1, A2 and A3 are NO, then your project is deemed to be of MINIMAL RISK.**  **If this is the case, then you can apply for approval through your supervisor under PROPORTIONATE REVIEW. You do so by completing PART B of this form.**  **If you have answered NO to all questions on this form, then your project does not require ethical approval. You should submit and retain this form as evidence of this.** | | *Delete as appropriate* |
| 4 | Does your project involve human participants or their identifiable personal data?  *For example, as interviewees, respondents to a survey or participants in testing.* | **NO** |

|  |  |  |
| --- | --- | --- |
| **B.1 The following questions must be answered fully.**  **All grey instructions must be removed.** | | *Delete as appropriate* |
| 1.1. | Will you ensure that participants taking part in your project are fully informed about the purpose of the research? | **YES - N/A** |
| 1.2 | Will you ensure that participants taking part in your project are fully informed about the procedures affecting them or affecting any information collected about them, including information about how the data will be used, to whom it will be disclosed, and how long it will be kept? | **YES - N/A** |
| 1.3 | When people agree to participate in your project, will it be made clear to them that they may withdraw (i.e. not participate) at any time without any penalty? | **YES - N/A** |
| 1.4 | Will consent be obtained from the participants in your project?  Consent from participants will be necessary if you plan to involve them in your project or if you plan to use identifiable personal data from existing records. “Identifiable personal data” means data relating to a living person who might be identifiable if the record includes their name, username, student id, DNA, fingerprint, address, etc.  *If YES, you must attach drafts of the participant information sheet(s) and consent form(s) that you will use in section B.3 or, in the case of an existing dataset, provide details of how consent has been obtained.*  *You must also retain the completed forms for subsequent inspection. Failure to provide the completed consent request forms will result in withdrawal of any earlier ethical approval of your project.* | **YES - N/A** |
| 1.5 | Have you made arrangements to ensure that material and/or private information obtained from or about the participating individuals will remain confidential? | **NO - N/A** |

|  |  |  |
| --- | --- | --- |
| **B.2 If the answer to the following question (B2) is YES, you must provide details** | | *Delete as appropriate* |
| 2 | Will the research be conducted in the participant’s home or other non-University location?  *If* ***YES****, you must provide details of how your safety will be ensured.* | **NO** |
| |  |  |  |  | | --- | --- | --- | --- | | **B.3 Attachments**  **ALL of the following documents MUST be provided to supervisors if applicable.**  **All must be considered prior to final approval by supervisors.**  **A written record of final approval must be provided and retained.** | ***YES*** | ***NO*** | ***Not Applicable*** | | Details on how safety will be assured in any non-University location, including risk assessment if required (see B2) |  |  | **X** | | Details of arrangements to ensure that material and/or private information obtained from or about the participating individuals will remain confidential (see B1.5)  *Any personal data must be acquired, stored and made accessible*  *in ways that are GDPR compliant.* |  |  | **X** | | Full protocol for any workshops or interviews\*\* |  |  | **X** | | Participant information sheet(s)\*\* |  |  | **X** | | Consent form(s)\*\* |  |  | **X** | | Questionnaire(s)\*\*  *sharing a Qualtrics survey with your supervisor is recommended.* |  |  | **X** | | Topic guide(s) for interviews and focus groups\*\* |  |  | **X** | | Permission from external organisations or Head of Department\*\*  *e.g. for recruitment of participants* |  |  | **X** | | | |

**Further Information**

<http://www.city.ac.uk/department-computer-science/research-ethics>

https://www.city.ac.uk/research/ethics/how-to-apply/participant-recruitment

https://www.city.ac.uk/research/ethics

# Participation Information Sheet

N/A